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(73) Inventor/Applicant (for US only): TELAMA, Ar (FI/FI); Ristiliventti 20 A 1, FIN-00520 Jyväskylä (FI).	With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.
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(54) Title: WATER REMOVAL ELEMENT IN A PAPER MACHINE AND METHOD OF MANUFACTURING SUCH AN ELEMENT

(57) Abstract:

Paper and board machines require the use of fixed water removal elements adapted to squeeze the wire or press felt of the machine from the side opposite to the sheet side of the wire/felt, whereby water is removed from the wire/felt. The present invention relates to a water removal element comprising a body (1, 6) and a ceramic wear-resisting coat (5). The body (1, 6) comprises an elongated continuous section forming a bounded space into which a thermoset plastic compound fill (5) can be cast, and at least one surface suited to accommodate the adherence of said wear-resisting coat (5). The bounded interior space of the continuous section body is at least partially filled with said thermoset plastic compound fill (5) and said ceramic wear-resisting coat (5) is formed by a ceramic coat (3) applied by thermal spray-coating onto a surface of the continuous section body (1).

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Claims:

1. A water removal element in a paper or board machine,
said element comprising a body (1, 6) and a ceramic wear-
resisting coat (5),

characterized in that

- said body (1, 6) comprises
 - an elongated continuous section forming a bounded space into which a flowing material (6) can be cast, and at least one surface for ed to accommodate the adherence of said wear-resisting coat (5),
 - a thermoset plastic compound fill (6) cast to fill said bounded space at least partially, and
- 20 - said ceramic wear-resisting coat (5) is formed by a ceramic coat (5) applied onto a surface of the continuous section body (1) by thermal spray-coating.
- 25 2. A water removal element as defined in claim 1, characterized in that said continuous section (1) constituting the casting mould has an open cross-sectional shape, advantageously approximating a U-shape having its interior at least partially filled with a thermoset plastic compound and having said ceramic coat (5) adhered to its base part (3).
- 30 3. A water removal element as defined in any of claims 1 and 2, characterized by a slot (7) machined into the thermoset plastic compound fill (6) for mounting the element to a support frame.

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4. A water removal element as defined in any of claims
1 - 3, characterized by having the coat (5)
made from one of the following compounds: Al₂O₃, Cr₂O₃,
ZrO₂, TiB₂, SiO₂, TiO₂, WC and Cr₃C₆ or a mixture thereof.

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5. A water removal element as defined in any of claims
1 - 4, characterized by having the coat (5)
sealed by impregnation with, e.g., a compound selected
from the group of the following compounds: phenolic
resins, fluorinated resins, epoxy resins, phosphate
compounds and methacrylate resins.

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6. A water removal element as defined in any of claims
1 - 5, characterized by having the fill
compound of the continuous section (1) selected from one
of the following groups of compounds: epoxy resins, meth-
acrylate resins, polyester resins, vinyl ester resins and
phenolic resins.

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7. A method of manufacturing a water removal element,
characterized in that said method comprises
at least the following steps:

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- a ceramic coat (5) is applied onto at least
one surface of the continuous section (1) by
thermal spray-coating, and

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- the interior of the continuous section (1) is
filled at least partially with a thermoset
plastic compound fill (6).

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8. A method as defined in claim 7, characterized
in that the ceramic coat (5) is sealed by
impregnating with a sealing compound.

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9. A method as defined in claim 7 or 8, characterized
in that a mounting slot (7) is machined

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into said thermoset plastic compound fill (6) after the curing step of the plastic compound.

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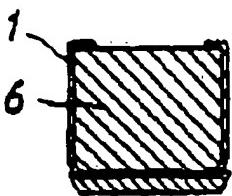
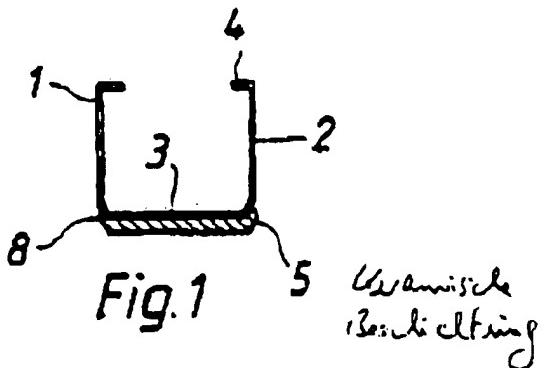


Fig. 2

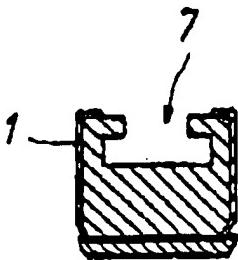
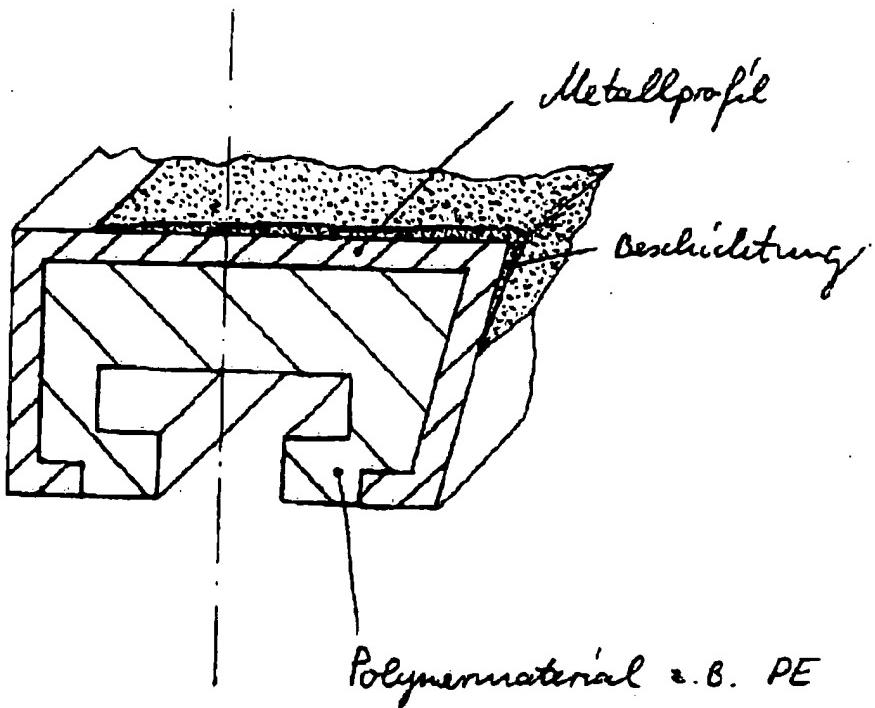
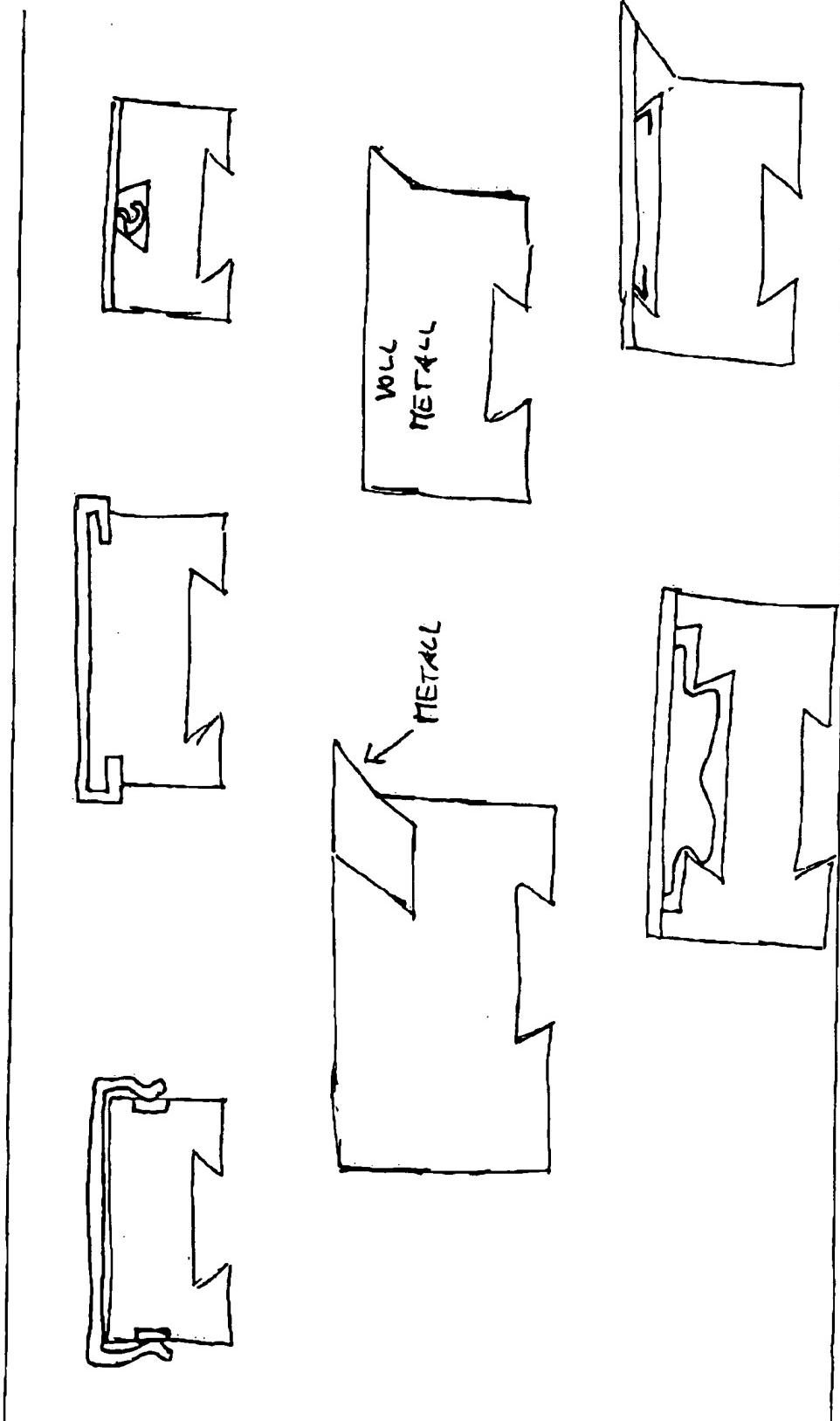


Fig. 3

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